ABSTRACT

An OFDM receiver recovers an rf signal as in-phase (I) and quadrature phase (Q) components of a baseband signal sampled in an A/D converter. The I and Q components of a received symbol are correlated at all sampling points. Correlation values are averaged over the latest L frames and saved in an L-deep FIFO. Symbol amplitude and phase are computed and passed to an offset estimator and an OFDM frame synchronization estimator. A phase-locked loop oscillator provides a sample number identifying the OFDM frame boundary to the offset estimator. An estimated offset value is selected as the negative of the phase angle of the auto correlation.